

Abstract

Synchronous rectifier gate drive mechanisms are revealed which are universally applicable to zero voltage switching power converters which rely on an auxiliary inductor to drive the critical turn on transition of the main switch of the power converter. One of the gate drive mechanisms revealed can also be used to improve the ZVS load range of the converter and to increase the power capability of the converter. Voltage limiting circuits that clamp the gate voltage of a synchronous rectifier during the turn off transition of the synchronous rectifier, preventing inadvertent turn on of the synchronous rectifier, are revealed.